

REMARKS

The Examiner is thanked for the performance of a thorough search. The Examiner is also thanked for the allowance of Claims 14, 23, and 41.

By this amendment, Claims 1, 14, 15, 23, and 41 have been amended to correct typographical errors that were inadvertently introduced and to more clearly identify the subject matter covered by Claims 14, 23, and 41. New Claims 42 and 43 have been added. No claims have been cancelled. Hence, Claims 1-43 are pending in the application.

SUMMARY OF THE REJECTIONS/OBJECTIONS

Claims 1-4, 7-10, 15-19, 24-25, 28-31 and 34-37 have been rejected under 35 U.S.C. § 102(b) as allegedly anticipated by the published patent application WO 91/03024 by Masden et al. ("*Masden*"). Claims 1-2 and 28-29 have been rejected under 35 U.S.C. § 102(e) as allegedly unpatentable over U.S. Patent Number 6,587,921 issued to Chiu et al. ("*Chiu*"). Claims 5-6, 11-13, 20-22, 26-27, 32-33, and 38-40 are objected to as being dependent upon a base claim, but would be allowable if recited in independent form. The rejections are respectfully traversed.

CLAIMS 1-4, 7-10, 15-19, 24-25, 28-31 AND 34-37 ARE PATENTABLE OVER *MASDEN*

Each of the pending claims are patentable over the cited art as each claim features subject matter that is not disclosed, taught, or suggested by the cited art. It is respectfully submitted that each of the pending claims is patentable over *Masden*.

Claim 1 is patentable over *Masden*

Claim 1 features the elements of:

“sending, from a requestor to a master of the resource, a lock mode request for a lock mode on the resource;
receiving the resource at the requestor from a holder of the resource; and

accessing the resource as if the requestor had been granted the lock mode without waiting to receive an express lock mode grant from the master.” (emphasis added)

One or more of the above-quoted elements is not disclosed, taught, or suggested by *Masden*.

There are significant differences between the approach of the pending claims and the approach of *Masden*. The pending claims are directed towards increasing performance in transferring data items in a multi-node system by causing requestors of the data item to interpret receipt of a block transfer message as a lock grant message. Advantageously, the requestor may then access the data item as soon as it is received without having to wait for the explicit lock grant from the master of the resource. In contrast, the approach of *Masden* requires express lock grants. No portion of *Masden* is cited that discusses a requestor of a data item interpreting receipt of a block transfer message as a lock grant message.

Masden does not show the element of “accessing the resource as if the requestor had been granted the lock mode without waiting to receive an express lock mode grant from the master.” The portion of *Masden* cited to show this element (page 6, lines 30-32) merely states, *in toto*, “the data is then modified by the workstation and then immediately written back to the file server.” This passage only mentions two entities, a file server and a workstation. Thus, the argument of the Office Action relies upon the workstation being analogous to the requester, and the file server being analogous to both the master of the resource and the holder of the resource.

The workstation of *Masden* expressly requests and receives an express lock mode grant from the file server, e.g., *Masden* states “workstations issue requests to the file server to open and lock files or records resident on the file server” (Page 6, line 25-27). Page 6, line 37-Page 7, line 8 of *Masden* explains that the express lock mode grant is used to “prevent inconsistent data” from resulting from multiple clients access the same file simultaneously. Thus, the workstations of *Masden* do not access any files without first receiving an express lock grant from the file server. Therefore, assuming, *arguendo*, that the workstations of *Masden* are analogous to a requestor, and the file server of *Masden* is analogous to both the master of the resource and the holder of the resource, *Masden* still

cannot possibly show the element of “accessing the resource as if the requestor had been granted the lock mode without waiting to receive an express lock mode grant from the master.”

Consequently, as at least one element of Claim 1 is not disclosed, shown, or suggested by *Masden*, it is respectfully submitted that Claim 1 is patentable over *Masden*.

Claim 3 is patentable over *Masden*

Claim 3 features the elements of:

“receiving, at a holder, an inform lock holder message that a requestor needs the resource, where the holder currently holds the resource and a first lock mode on the resource; transferring the resource to the requestor in response to receiving the inform lock holder message without sending a status message to a master of the resource wherein the status message is a down-convert message or a release lock message; and
updating a lock mode record, maintained by the holder, to indicate that the holder has down-converted from the first lock mode to a second lock mode for the resource.” (emphasis added)

One or more of the above-quoted elements is not disclosed, taught, or suggested by *Masden*.

Masden does not show the element of “transferring the resource to the requestor in response to receiving the inform lock holder message without sending a status message to a master of the resource wherein the status message is a down-convert message or a release lock message.” The portion of *Masden* cited to show this element (page 8, lines 20-24) merely states, *in toto*:

“However, if another workstation requests file services on an Oplocked file, the file server sends a message to the workstation currently owning the file to return the updated file to the file server and to revert to a sharing mode.”

The arguments of the Office Action against the patentability of Claim 3 rely upon the requesting workstation being analogous to the requester, the workstation that currently owns the file being analogous to the holder of the resource, and the file server being analogous to the master of the resource.

The concept of transferring a resource to a requester is absent from the cited portion of *Masden*. Instead of discussing transferring a resource to a requestor, the cited portion of *Masden* discusses a file server sending a message to a workstation to request the return of an updated file. Thus, assuming, *arguendo*, that the requesting workstation is analogous to a requester and the file is analogous to a resource, the cited portion of *Masden* still wouldn't discuss the concept of transferring a resource **to a requestor** because the file is not transferred to the requesting workstation, but rather the workstation currently owning the file receives a request to return a file **to the file server**. Since the cited portion of *Masden* lacks the concept of transferring a resource to a requestor, the cited portion cannot possibly show the element of "transferring the resource to the requestor in response to receiving the inform lock holder message without sending a status message to a master of the resource wherein the status message is a down-convert message or a release lock message."

Consequently, as at least one element of Claim 3 is not disclosed, shown, or suggested by *Masden*, it is respectfully submitted that Claim 3 is patentable over the cited art, and is in condition for allowance.

Claim 8 is patentable over *Masden*

Claim 8 features the elements of:

"receiving, at a master, a request message which indicates that a requestor needs a particular resource of a plurality of resources, where the master maintains a plurality of lock mode records corresponding to the plurality of resources;
sending, from the master to a holder, an inform lock holder message to indicate to the holder that the requestor needs the particular resource;
receiving a lock access message from the requestor where the lock access message indicates that the requestor has assumed a lock mode relative to the particular resource; and
performing an update to a particular lock mode record of the plurality of lock mode records in response to receiving the lock access message, wherein the update indicates that the requestor has assumed the lock mode on the particular resource." (emphasis added)

One or more of the above-quoted elements is not disclosed, taught, or suggested by *Masden*.

Masden does not show the element of “sending, from the master to a holder, an inform lock holder message to indicate to the holder that the requestor needs the particular resource.” The portion of *Masden* cited to show this element (page 8, lines 20-24, quoted above) merely states, *in toto*:

“However, if another workstation requests file services on an Oplocked file, the file server sends a message to the workstation currently owning the file to return the updated file to the file server and to revert to a sharing mode.”

As above, the arguments of the Office Action against the patentability of Claim 8 rely upon the requesting workstation being analogous to the requester, the workstation that currently owns the file being analogous to the holder of the resource, and the file server being analogous to the master of the resource.

The approach of *Masden* is quite different than the approach of Claim 8. For example, in *Masden*, when a first workstation requests file services on a file, that first workstation expressly notifies the file server. The file server, in turn, expressly notifies a second workstation, which currently owns the file, to return the updated file to the file server. The file server, after receiving the file from the second workstation, transfers the file to the first workstation. Thus, there is never a need in the approach of *Masden* for the first workstation to transfer the file to the second workstation, and the workstation that owns the file is never sent any information that identifies another workstation that is requesting the file.

In contrast, the above-quoted element requires that an inform lock holder message that indicates to the holder that the requestor needs the particular resource is sent from the master to a holder. Assuming, *arguendo*, that the requesting workstation is analogous to the requester, the workstation that currently owns the file is analogous to the holder of the resource, and the file server is analogous to the master of the resource, the cited portion of *Masden* still wouldn't disclose, teach, or suggest the above-quoted element because the cited portion lacks any discussion of the file server sending any message to the workstation owning the file that the requesting workstation needs the file. At best,

Masden merely discusses sending a message, from the file server to the workstation owning the file, which indicates that the file should be returned to the file server.

Consequently, as at least one element of Claim 8 is not disclosed, shown, or suggested by *Masden*, it is respectfully submitted that Claim 8 is patentable over the cited art, and is in condition for allowance.

Independent Claims 15, 17, 24, 28, 30, and 35 are patentable over *Masden*

Claim 15 includes limitations similar to Claim 1, except in the context of a system. Claim 28 includes limitations similar to Claim 1, except in the context of a computer-readable medium. It is therefore respectfully submitted that Claims 15 and 28 are each patentable over *Masden* for at least the reasons given above with respect to Claim 1.

Claim 17 includes limitations similar to Claim 8, except in the context of a system. Claim 35 includes limitations similar to Claim 8, except in the context of a computer-readable medium. It is therefore respectfully submitted that Claims 17 and 35 are each patentable over *Masden* for at least the reasons given above with respect to Claim 8.

Claim 24 includes limitations similar to Claim 3, except in the context of a system. Claim 30 includes limitations similar to Claim 3, except in the context of a computer-readable medium. It is therefore respectfully submitted that Claims 24 and 30 are each patentable over *Masden* for at least the reasons given above with respect to Claim 3.

Dependent Claims 2, 4-7, 9-13, 16, 18-22, 25-27, 29, 31-24, and 36-40 are patentable over *Masden*

Claims 2, 4-7, 9-13, 16, 18-22, 25-27, 29, 31-24, and 36-40 are dependent claims, each of which depends (directly or indirectly) on one of the claims discussed above. Each of Claims 2, 4-7, 9-13, 16, 18-22, 25-27, 29, 31-24, and 36-40 is therefore allowable for the reasons given above for the claim on which it depends. In addition, each of Claims 2, 4-7, 9-13, 16, 18-22, 25-27, 29, 31-24, and 36-40 introduces one or more additional limitations that independently render it patentable. However, due to the fundamental differences already identified, to expedite the positive resolution of this case a separate

discussion of those limitations is not included at this time, although the Applicants reserve the right to further point out the differences between the cited art and the novel features recited in the dependent claims.

CLAIMS 1-2 AND 28-29 ARE PATENTABLE OVER *CHIU*

Each of Claims 1-2 and 28-29 are patentable over *Chiu* as each of Claims 1-2 and 28-29 features subject matter that is not disclosed, taught, or suggested by *Chiu*.

Claims 1 and 28 are patentable over *Chiu*

Claims 1 and 28 feature the elements of:

“sending, from a requestor to a master of the resource, a lock mode request for a lock mode on the resource;
receiving the resource at the requestor from a holder of the resource; and
accessing the resource as if the requestor had been granted the lock mode without waiting to receive an express lock mode grant from the master.” (emphasis added)

One or more of the above-quoted elements is not disclosed, taught, or suggested by *Chiu*.

There are significant differences between the approach of the pending claims and the approach of *Chiu*. In contrast to the claimed invention, the cited portion of *Chiu* is directed towards writing data to cache, and does not contain a suggestion of sending a request for a resource, let alone the other features of the quoted-elements. Instead of discussing the features of the above quoted-elements, *Chiu* discusses (a) sending a request, from a host to a first node, to write data, (b) receiving the data at the first node without receiving permission to do so from either the host or a second node, (c) notifying the second node of the request, and (d) transferring the data to the second node. It is respectfully submitted that *Chiu* discloses none of the above-quoted claim elements.

Chiu cannot disclose, teach, or suggest the element of “sending, from a requestor to a master of the resource, a lock mode request for a lock mode on the resource.” The portion of *Chiu* cited to show this element (Col. 16, lines 62-63) states, *in toto*, “receiving a request to write data in a first node of a storage cluster from a host.” As the host is transmitting the request in the cited portion of *Chiu*, the Office Action argument

presumably is based on the host of *Chiu* being analogous to the requestor. However, assuming, *arguendo*, that the host of *Chiu* is analogous to a requestor, the host of *Chiu* does not send a lock mode request for a lock mode on the resource to a master of the resource, but rather sends a request to write data in the first node. Since it is the host, and not the first node, that contains the data, the first node cannot be the master of the resource. Thus, anything sent from the host to the first node cannot be analogous to the requirements of the above-quoted element.

Consequently, there is no step performed in *Chiu* that is analogous to the element of “sending, from a requestor to a master of the resource, a lock mode request for a lock mode on the resource.” Thus, *Chiu* cannot possibly disclose, teach, or suggest this element.

Chiu cannot disclose, teach, or suggest the element of “receiving the resource at the requestor from a holder of the resource.” The portion of *Chiu* cited to show this element (Col. 16, line 66) states, *in toto*, “receiving the data into the allocated memory space from the host prior to the first node receiving permission....”

It is unclear as to which entity the argument of the Office Action is relying on to show the requestor and the holder of the resource. Presumably, the argument of the Office Action relies upon the first node being the requestor (even though this is not consistent with the Office Action’s earlier argument), as the first node is the only entity in the cited portion of *Chiu* that receives anything (*Chiu* teaches the first node receives the data from the host). However, the first node cannot be the requestor, because the first node never sent the master of the resource a lock mode request for a lock mode on the resource as required by Claims 1 and 28.

Even if the argument of the Office Action relies upon the host being the requestor, the cited portion of *Chiu* still doesn’t show this element, because the host never “receiving the resource at the requestor from a holder of the resource,” as featured in Claims 1 and 28. At best, the host sends a request, to the first node, to write data, but the host never receives any resources. Consequently, any argument that relies upon the host to show a requestor as defined by Claims 1 and 28 cannot be sustained by the discussion of *Chiu*.

Consequently, there is no step performed in *Chiu* that is analogous to the element of “receiving the resource at the requestor from a holder of the resource.” Thus, *Chiu* cannot possibly disclose, teach, or suggest this element.

As at least one element of Claims 1 and 28 are not disclosed, shown, or suggested by *Chiu*, it is respectfully submitted that Claims 1 and 28 are patentable over *Chiu*. As dependent claims 2 and 29 contain the limitation of Claims 1 and 28 respectively, it is respectfully submitted that Claims 2 and 29 are patentable over the cited art for at least the reasons given above with respect to Claims 1 and 28.

CONCLUSION

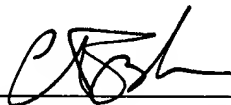
For the reasons set forth above, it is respectfully submitted that all of the pending claims are now in condition for allowance. Therefore, the issuance of a formal Notice of Allowance is believed next in order, and that action is most earnestly solicited.

The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any fee shortages or credit any overages Deposit Account No. 50-1302.

Respectfully submitted,

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